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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,557	06/25/2003	Robert M'Closkey	PD-02-0744	5467

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EXAMINER	
RAYMOND, EDWARD	

ART UNIT	PAPER NUMBER
2857	

DATE MAILED: 11/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/603,557	M'CLOSKEY ET AL.	
	Examiner	Art Unit	
	Edward Raymond	2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 September 2004*.

2a)☐ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6,7,9,10,12,16-19,21,22,24,25 and 27* is/are rejected.

7)☒ Claim(s) *5,8,11,13-15,20,23,26 and 28-30* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *20040602*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1-4, 6-7, 9, 10, 12, 16-19, 21-30** are rejected under 35 U.S.C. 102(b) as being anticipated by Challoner et al. Challoner et al. teach a distributed digital control circuit device comprising: a digital drive controller circuit for producing a drive signal for exciting a drive mode of a vibratory gyroscope to a substantially constant amplitude from a drive mode response signal (Claims 1 and 16: see Figure 2: Drive Controllers D1 and D2); a digital rebalance controller circuit for producing a sense rebalance signal from a sense mode response signal to (Claims 1 and 16: see col. 4, lines 25-29) regulate a sense mode of the vibratory gyroscope to substantially zero (Claims 1 and 16: see col. 4, lines 44-54); and a digital demodulator for demodulating the sense rebalance signal with the drive mode response signal to produce a digital rate estimate of the vibratory gyroscope (Claims 1 and 16: see col. 4, lines 29-30).

Challoner et al. teach a circuit device wherein the digital drive controller circuit, the digital rebalance controller circuit and the digital demodulator are implemented on a single application specific integrated circuit (ASIC) (Claims 2 and 17: see Figure 1: The Examiner notes that the micro-gyroscope is on a single circuit).

Challoner et al. teach a circuit device wherein the drive mode response signal and the sense mode response signal are combined separately in the digital drive controller circuit and in the digital rebalance controller circuit to aid in isolating the drive and sense modes (Claims 3 and 18: see Figure 2: The Examiner notes that that the drive and sense circuits are separate).

Challoner et al. teach a circuit device wherein the drive mode response signal and the sense mode response signal are combined separately in the digital drive controller circuit and in the digital rebalance controller circuit each with a pair of programmable amplifiers (Claims 4 and 19: see Figure 2: Pre-amplifiers 20).

Challoner et al. teach a circuit device wherein the drive signal and the sense rebalance signal are combined separately to excite the drive mode and regulate the sense mode to aid in isolating the drive and sense mode (Claims 6 and 21: see Figure 2: The Examiner notes the drive signal and sense signal are combined separately).

Challoner et al. teach a circuit device wherein the drive signal and the sense rebalance signal are combined with a separate pair of programmable filters to each excite the drive mode and regulate the sense mode (Claims 7 and 22: see Figure 2: Pre-amplifier 20).

Challoner et al. teach a circuit device wherein the digital drive controller circuit comprises an automatic gain control for exciting the drive mode to the substantially constant amplitude (Claims 9 and 24: see col. 4, lines 25-31).

Challoner et al. teach a circuit device wherein the digital drive controller circuit and the digital rebalance controller circuit are programmable to match the vibratory gyroscope (Claims 10 and 25: see col. 3, line 67 through col. 4, line 24).

Challoner et al. teach a circuit device wherein the programmable digital drive controller 1 circuit and the programmable digital rebalance controller circuit comprise one or more programmable amplifiers (Claims 12 and 27: see Figure 2: Pre-amplifier 20: The Examiner notes that the amplifiers have to be set to amplify at a particular ratio).

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ljung teaches a solid state-vibrating gyro. Kim et al. teach a vibration type micro-gyroscope. Challoner et al. teach a coriolis sensor interface. Wyse et al. teach a navigation grade micro-machined rotation sensor system.

Allowable Subject Matter

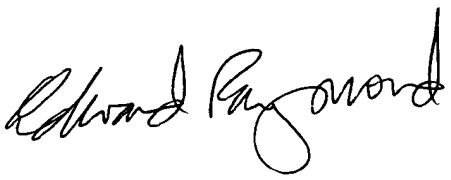
4. **Claims 5, 8, 11, 13-15, 20, 26, and 28-30** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Contact Information

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward Raymond whose telephone number is 571-272-2221. The examiner can normally be reached on Monday through alternating Friday between 8:00 AM and 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc Hoff can be reached on 571-272-2216. The fax phone numbers for the organization where this application or proceeding is assigned are 571-273-2221 for regular communications and 571-272-1562 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1782.



September 26, 2004
Edward Raymond
Patent Examiner
Art Unit 2857